UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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DEC 18 2017

REPLY TO THE ATTENTION OF:

WG-15J

Eric Oswald, Chief
Office of Drinking Water and Municipal Assistance
Michigan Department of Environmental Quality
Constitution Hall, 4th Floor
P.O. Box 30241
Lansing, Michigan 48909-7741

RE: Fiscal Year (FY) 2015 and FY 2016 End-of-Year Evaluation (EOY) for the Public Water System Supervision (PWSS) Program Grant

Dear Mr. Oswald:

This letter transmits the PWSS program EOY report, which documents activities performed by both the Michigan Department of Environmental Quality (MDEQ) and the EPA under the FY 2015 and FY 2016 Annual Resource Deployment Plan (ARDP), which serves at the PWSS grant workplan. The ARDP is the mechanism used to document specific required commitments for the PWSS program. This report is for the October 1, 2014 to September 30, 2016 budget period.

Our summary provides comments according to major subcategories of the PWSS program. These subcategories include new and existing National Primary Drinking Water Regulations (NPDWR), public water system (PWS) sanitary surveys, laboratory certification, NPDWR enforcement, data management and reporting to EPA, the implementation of Michigan's strategy to increase the technical, managerial and financial capacity of PWSs including operator certification, source water protection, laboratory certification and measures and indicators we use to discuss overall performance of the PWSS program.

Analysis of the various programs within Michigan's drinking water program, and the data gleaned from implementation of these programs, show that MDEQ has met the PWSS baseline program requirements during FY 2015 and FY 2016. However, EPA Region 5 has a significant number of concerns with MDEQ's PWSS program, which are provided under major subcategories in the enclosed program evaluation.

EPA Region 5 recognizes progress MDEQ has made to improve its drinking water program during FY 2015 and FY 2016. Progress includes:

- MDEQ has begun the process to identify data needs, design and create data system(s) for the State's drinking water program, in addition to identifying costs and sources of funding;

- MDEQ has been hiring technical staff and revising regulation implementation protocols to better conduct activities that ensure safe drinking water; and,
- MDEQ exceeded its enforcement commitments to address or resolve systems' noncompliance issues during FY 2015 and FY 2016.

EPA Region 5's primary concerns include:

- Necessary resources are not available to fully implement a robust drinking water program;
- MDEQ continues to have severely inadequate electronic data reporting capabilities;
- Although violations received timely follow up and MDEQ outperformed its enforcement commitments, community water system monitoring violations and nontransient noncommunity water system monitoring violations for chronic contaminants have continued to increase during 2015 and 2016; and,
- Regular communication between EPA Region 5 and MDEQ is key to partnering, which serves to ensure that public health is protected. There has been an excellent forum over the past 25 years for the identification and resolution of issues with assistance from EPA over the past 25 years. However, there was a clear lack of effective communication by MDEQ to EPA Region 5 during the Flint crisis which served to undermine public health protection of Flint residents.

In conclusion, we find MDEQ is implementing an acceptable PWSS program overall under the SDWA in Michigan; however, improvements are necessary to continue to ensure public health protection to consumers. As always, EPA Region 5 offers continued support to help meet these challenges. If you have questions or concerns regarding this report and/or current or future program needs, feel free to call Jennifer Crooks of my staff at (312) 886-0244.

Sincerely,

Christopher Korleski
Director, Water Division

Enclosures

cc: Richard Benzie, MDEQ (w/enclosures)
Amy Lachance, MDEQ, (w/enclosures)
Dana Debruyn, MDEQ, (w/enclosures)

**United States Environmental Protection Agency, Region 5**

**FY 2015/FY 2016 End-of-Year Evaluations**
**of the**
**Michigan Department of Environmental Quality (MDEQ),**
**Drinking Water and Municipal Assistance Division,**
**Public Water System Supervision (PWSS) Program**

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**Federal Funding Used:** Public Water System Supervision (PWSS) grant; Drinking Water State Revolving Fund (DWSRF) Set-asides: 1) Small System Technical Assistance set-aside, 2) PWSS Program set-aside, and 3) Local Assistance set-asides that include Wellhead Protection and Capacity Development.

**FY 2015/FY 2016 End-of-Year (EOY) Evaluation Synopsis:** EPA conducted an in-depth on-site review of Michigan's drinking water program (Program) on April 4-8, 2016. The results of this in-depth review, including EPA's review of specific issues related to Flint, are described in a separate Michigan Program Review Report. This FY 2015/FY 2016 EOY Report, is EPA Region 5's evaluation of MDEQ's implementation of the PWSS program in Michigan under the FY 2015 and FY 2016 PWSS grants.[1]

**FY 2015/FY 2016 EOY Evaluation - Summary of Concerns:** Analysis of the various components within Michigan's Program and the data gleaned from implementation of these components show that MDEQ has met the PWSS baseline program requirements. However, EPA Region 5 has a number of concerns with the Program, as set forth under the individual areas of review below.

**Resource Concerns:**

- Michigan General Fund monies to support the Program have decreased over the years. Federal funds and public water supply (PWS) fees are now paying for approximately 92% of the current Program expenditures; and current expenditures are not sufficient to fully implement a robust Program.

[1] The preparation of these end-of-year reports were delayed due to the Flint crisis and completion of the Michigan Program Review and Report.

- Due to inadequate funding, the State has been unable to hire sufficient staff to accomplish all Program activities required under the Safe Drinking Water Act (SDWA). During FY 2016, MDEQ was able to hire some additional technical staff using set-aside money. Hiring continues in FY 2017.

- In 2009, EPA Region 5 agreed that, because of the Program's lack of funding, the State needed to prioritize its efforts on the highest risk contaminants and activities, and temporarily disinvest from efforts on activities that have a lower priority, i.e., activities that do not impact public health.

- The Program simply does not have enough resources to fully implement PWSS requirements, as documented in previous End-of-Year Evaluation reports. Continued inadequate funding of the Program could ultimately affect MDEQ's ability to meet federal PWSS primacy requirements, and EPA Region 5 strongly encourages MDEQ to search for and develop other sources of State funding now to ensure adequate Program funding in the future.

**Data Management Concerns:**

- MDEQ continues to have severely inadequate electronic data reporting capabilities, due to competing Program priorities and resource limitations.

- The lack of up-to-date data management capability in the Program has caused significant inefficiencies; for example, MDEQ staff's lack of access to real-time data may delay timely actions to address noncompliance impacting public health.

- The State's noncommunity water system (NCWS) program continues to be unable to meet all federal reporting requirements; it is unable to report some rule violations, corrective actions, and assessments.

MDEQ did not make significant progress in transitioning to a more up-to-date data management system in FY 2015 due to financial and staff limitations. However, in 2016, the State was able to obtain support from SAIC, an EPA-Headquarters' contractor, to update its NCWS data management system. Migration of NCWS data to an updated data management system continues; migration of data is the first step of many to meet reporting requirements.

**Compliance and Enforcement Concerns:**

- Since 2006, EPA Region 5 and MDEQ have agreed upon 7 shared compliance goals to track compliance trends, to identify compliance areas needing improvement, and to obtain State commitments to improve compliance.

    - The CY 2015 Regional Shared Goals data (final data as of July 2016), show that MDEQ met 3 of the 7 goals.

- The CY 2016 Regional Shared Goals data (final data as of June 2017), show that MDEQ met 4 of the 7 goals.

- Community water system (CWS) monitoring violations have been increasing during CY 2015 and CY 2016.

- The number of nontransient noncommunity water systems (NTNCWS) with monitoring violations of chronic health risks, such as volatile organic contaminants, has increased dramatically since FY 2014.

Regular communication between EPA Region 5 and MDEQ over the past 25 years has provided an excellent forum for the State to identify and resolve various issues with assistance from EPA Region 5, including rule implementation issues, data problems, and compliance/enforcement issues. However, in the case of Flint, there was a lack of effective and clear communication by MDEQ with EPA Region 5. It seems clear that MDEQ and EPA Region 5 would have benefitted from State/EPA discussions of an unusual drinking water management issue such as the source change that occurred in Flint prior to the change. Historically, EPA Region 5 has offered and provided advice; recommendations; and technical, regulatory and financial assistance when possible to all six Region 5 states, and overall, public health protection has benefitted from open communications between EPA Region 5 and its state partners. EPA Region 5 intends to continue this practice of open communications.

**FY 2015/FY 2016 EOY Program Evaluation – Detailed Comments:**

**Resources:**

MDEQ's technical staff conducts the mandatory components of the PWSS program (including engineering plan and specification reviews, and sanitary surveys.) However, over the past 10 years, State General Fund monies to support the Program have decreased (only 8% of State General Fund monies in FY 2016); federal funds and state PWS fees are currently paying approximately 92% of the program expenditures (63% federal funds with 27% PWSS grant and 36% DWSRF set-aside funding in FY 2016; and 29% state PWS fees in FY 2016). For many years, the PWS fees have not kept up with the increased costs of the Program implementation and increased work associated with implementation of new regulations under SDWA. Due to an inadequate amount of funding, the Michigan Program has not been able to hire sufficient staff to accomplish all program activities, and the Program has been and continues to try to absorb new required activities into their existing staff's already overfilled schedules. A recent State audit concluded that not enough PWS fees are collected to provide necessary support of the Program. The State has also reported that every year there is uncertainty as to whether the required state match for the PWSS and the DWSRF grants will be approved. MDEQ did begin hiring additional technical staff as engineering specialists for various drinking water rules, such as the Lead and Copper Rule and Surface Water Treatment Rules; for assistance to the City of Flint; and, for general public water supply oversight. A school lead sampling position was established in 2016 and operational since summer 2016. Hiring continues in FY 2017. In the noncommunity program, additional hiring has not increased to meet the demands of new requirements such as

the Revised Total Coliform Rule and the reduction in disinvestments such as with the Lead and Copper Rule.

Temporary Disinvestments

Resources have not kept pace with promulgation of new regulations, such as the Ground Water Rule, Disinfectant/Disinfection By-Product Rules, Surface Water Treatment Rules, and the Revised Total Coliform Rule. To address this resource shortfall, EPA Region 5 acknowledged during FY 2015 and FY 2016 that the State needed to prioritize the highest risk contaminants and activities to protect public health. EPA Region 5 encouraged states to be transparent about what activities can and cannot be completed. Thus, some activities that EPA Region 5 and Michigan believed did not have a public health impact were considered to be "lower priority" and some activities were temporarily disinvested. The use of temporary disinvestments by Michigan's Program, inadequate staffing, and inadequate data management capabilities, makes clear that the Program does not have enough resources to fully implement the PWSS program. Additional information regarding temporary disinvestments is described below.

- MDEQ had disinvested in some administrative components of the Consumer Confidence Report resulting in partial implementation of the rule in FY 2015 and FY 2016.

  Consumer Confidence Report (CCR):
  During FY 2015 and FY 2016, MDEQ notified community water systems (CWS) of the CCR requirements, and issued/reported violations in FY 2015 and FY 2016 for failure to produce and distribute a CCR. The CWS program does not issue violations for insufficient content, late reporting of a CCR to the State if the system can prove the CCR was distributed to consumers on-time, and does not issue violations for failure to submit a certification form.

- Submittal of the Lead and Copper Rule (LCR) reporting form had been a disinvestment, but at EPA Region 5's request, this activity was partially reinvested in FY 2016.

  Submittal of LCR reporting forms: A water system's failure to submit LCR reporting forms was deemed not be a public health risk, since the system was still required to report the laboratory results and the sample site data to the State. However, in March 2015, the EPA Region 5 realized the LCR reporting form was helpful to the State as it reviewed the data and sample sites. Consequently, LCR reporting forms were required in FY 2016 for CWSs. The MDEQ committed to tracking the submittal of the LCR reporting forms from NTNCWSs and issuing violations for failure to submit the LCR reporting form from NTNCWSs in calendar year 2017.

- The following activities were partially implemented in FY 2015, and the State fully implemented them in 2016:

1. Lead Consumer Notification of tap results at NTNCWSs:
   At EPA Region 5's request, from FY 2013 – FY 2015, MDEQ phased-in the notification of schools and daycares of the lead consumer notice requirement. The MDEQ has been successful in achieving compliance at over 99% of the NTNCWSs with this requirement, as noted in spring 2015. MDEQ agreed to fully implement the lead consumer notice requirement at the remaining NTNCWSs during the next 3-year compliance period, FY 2016 – FY 2018, with EPA Region 5 assistance. EPA Region 5 notified all remaining NTNCWSs of the lead consumer notice requirement by mail in January – March 2016.

2. Lead Annual/Triennial Sampling at NTNCWs during June – September Timeframe:
   The number of NTNCWSs conducting lead sampling during the required months of June through September (rather than outside of this timeframe) has been increasing over the past several years. The MDEQ worked hard to ensure all NTNCWSs that are required to conduct reduced monitoring during FY 2016, sample for lead during the June – September timeframe. EPA Region 5 is currently working with the State to enforce against NTNCWSs that sampled outside the required timeframe during 2015 and 2016.

NOTE: The FY 2017 PWSS grant states that the State is expected to fully implement all aspects of its Safe Drinking Water statutes and rules on which primacy is based. If the State is unable to implement any portion of such a statute or rule, or otherwise comply with the federal implementation regulations, the State must submit a plan describing the steps the State will take to achieve full implementation and a schedule for doing so. This plan and schedule must be submitted within 90 days of the award of this grant, and MDEQ met this requirement.

Funding for Staff:

The State has been funding many necessary program staff with Drinking Water State Revolving Fund (DWSRF) set-aside funds since 2000. According to the State, the number of staff funded by the DWSRF set-asides over the past 10 years has increased dramatically; in FY 2016, the State funded approximately 33 FTEs with DWSRF set-asides. Michigan General Fund monies historically funded critical programs like the on-site program (part of source water protection), but such funding is no longer available. Source Water Program set-asides have been funding this necessary program for approximately 7 years, with no permanent source of funding in sight. While the use of DWSRF set-aside funds to fund staff salaries is appropriate in the short-term and encouraged by EPA, it is not a sustainable source of funding in the long-term. (The State's DWSRF program has had difficulty in recent years ensuring the required State match was provided; without the proper State match, the DWSRF grant to the State decreases or is eliminated, along with the staff funded by the DWSRF set-aside funds.)

No new additional funds have come into the drinking water program in recent years. Federal rescissions from the FY 2015 and FY 2016 PWSS grants occurred. The federal rescission from the FY 2015 PWSS grant in spring of 2015 was especially difficult since

funding had already been allotted by the State for hiring staff. The rescission resulted in a reduction of approximately 8% of the grant, thus MDEQ postponed the filling of vacant positions in FY 2015.

Due to limited resources, the PWSS program prioritized activities in FY 2015 and FY 2016, placing emphasis on those activities with direct impact on public health. The MDEQ has contracted with the Local Health Departments (LHD) to implement the PWSS program at NCWSs. The implementation of the RTCR in April 2016 requires increased tracking of water system requirements including monitoring, increased surveillance by the State and LHDs, and increased technical assistance to systems to ensure compliance is maintained. MDEQ has indicated that if the federal PWSS grant continues to be reduced or if the DWSRF set-asides are reduced or eliminated, maintaining current staffing levels (including contracting with the LHDs) may be difficult and MDEQ's ability to meet minimum federal PWSS primacy requirements could be jeopardized.

Expertise:

According to the State, the departures and expected retirements of long-term knowledgeable staff recently and in the near future will have serious negative impacts on the program. The State's PWSS and Clean Water Act programs have worked on an alternate long-term funding change for all water programs at the State; however, this project has been delayed due to higher priority activities over the past several years. EPA Region 5 continues to offer assistance to the State, which includes compliance assistance and enforcement partnership. EPA Region 5 strongly encourages MDEQ to search for and develop another source of State funding now to ensure proper staff funding in the future.

**Data Management and Reporting:** MDEQ, with assistance from the Department of Technology Management and Budget (DTMB), maintains two data management systems that are supposed to track requirements for all rules and serve as the central store of data reported by laboratories, field offices and LHDs. However, MDEQ continues to have severely inadequate electronic data management and reporting capabilities, due to ongoing competing priorities and resource limitations. This is of great concern to EPA Region 5, since the accurate reporting of data to the State is the foundation of the drinking water program, and the NCWS program is having difficulty reporting violations for a number of rules. The lack of up-to-date data management has caused inefficiencies within the program; staff lack of access to real-time data may delay timely actions to address noncompliance. Financial/staff limitations within DTMB and the drinking water program continue to be an ongoing obstacle. For details regarding MDEQ's Data Management Limitations, see Attachment D in the FY 2015 and FY 2016 Annual Resource Deployment Plans (ARDP), the State's PWSS grant workplans.

Community Water System Program

The CWS program upgraded to the State's Safe Drinking Water Information System (SDWIS/State) 3.33 and FedRep 3.51 in late FY 2016 in order to use SDWIS/State to track

RTCR activities. DTMB has been working to upgrade the CWS SDWIS to a MS Sequel 2014 environment, which is a requirement for all SDWIS-State 3.33 reports to run properly.

MDEQ is currently not fully utilizing SDWIS Compliance Decision Support (CDS). EPA Region 5 encourages full automation of CDS for all rules to streamline and automate compliance decisions, which would allow staff to gain significant efficiencies. The CWS program is using SDWIS CDS for Inventory, RTCR (including Level 1 and Level 2 assessments), LCR, Stage 2 chlorine residuals, Stage 2 Trihalomethanes/Haloacetic Acids reporting, Surface Water Treatment Rule (SWTR) reporting, sanitary survey, site visits and deficiencies tracking, and violation/enforcement tracking.

EPA awarded a Multi-Purpose grant to MDEQ in July 2016 worth $173,000 to develop and implement enhance data tracking and analysis capabilities for LCR data.

In 2015, the CWS program did not track entry point chemical monitoring in SDWIS/State because SDWIS/State did not handle schedules the same way MDEQ handles schedules, and electronic reporting was not unavailable. The CWS program continues to track entry point monitoring in a separate database. MDEQ plans to transition entry point tracking to SDWIS soon.

As of July 2016, MDEQ reported the following violations prior to March 31, 2016 for newer rules at CWSs: Ground Water Rule (GWR), Lead and Copper Short-Term Revisions (LCRSTR), Long-Term 2 Surface Water Treatment Rule (LT2SWTR), Stage 1 and Stage 2 Disinfectants/Disinfection By-Products Rule (Stage 1 DBPR/Stage 2 DBPR). EPA Region 5 notes increased reporting of these violations, which shows increased attention and capability to conduct federal violation reporting.

- 12 GWR Treatment Technique (TT) and 61 GWR monitoring and reporting (M/R) violations;
- 7 Stage 1 DBPR TT violations, which is lack of a certified operator (one violation reported in 2015);
- 251 Stage 2 DBPR M/R violations and 31 Stage 2 DBPR MCL violations; and,
- 50 LCRSTR consumer notification M/R violations (Type 66 violations, these results are 4 times the reported number in 2014, which indicates that the State is reporting these violations as they are identified).

EPA Region 5 will continue to track CWS violation reporting to the federal database for new rules.

Due to the requirement that all 8 categories in a sanitary survey should be evaluated, a validation was created as a SDWIS/ODS 3.5 Data Check. A total of 103 CWSs had data quality errors as a result of this new validation. During FY 2016, MDEQ reduced these data quality errors to 31.

The CWS program has struggled for many years to ensure complete and accurate source treated flag and facility flow information is in SDWIS/State; these issues have been identified in error reports since October 2005. Periodic corrections to improve this data have been done. Currently,

MDEQ has 15 source treated flag/facility flow errors, less than 0.5% of the data.[2] However, the underlying issue of entering this data into SDWIS/State on a regular basis still remains a concern. A Standard Operating Procedure (SOP) should be written to outline how this data should be entered into SDWIS/State so staff can complete this task as new source water system facilities are added to SDWIS/State.

Noncommunity Water System Program

The NCWS program is continuing its use of WaterTrack, and DTMB maintains the software, programs and equipment for WaterTrack. WaterTrack is unable to report certain data to SDWIS/Fed for the Lead and Copper Rule due to data management limitations of WaterTrack; and WaterTrack can only partially support tracking and reporting for the GWR and Stage 2 DBPR. Thus, no GWR violations or other new rule violations are being reported to the federal database for NCWS. However, State staff are manually tracking these violations.

The NCWS program uses WaterTrack and FedRep 3.4 to report actions and sample data to EPA quarterly, and inventory data at least annually, in accordance with 40 CFR 142.15. Once the NCWS program is able to upgrade to SDWIS/State 3.33, they will need to upgrade to FedRep 3.51, which is necessary for the State to report RTCR data to EPA.

While MDEQ is struggling to ensure WaterTrack continues to function, MDEQ is also working with EPA-Headquarters' (EPA-HQ) and EPA-HQ's contractor, SAIC, to deploy a NCWS version of SDWIS-State on a new server; the State is hopeful to migrate all NCWS data to SDWIS-State by spring 2018. Since SDWIS-Prime will not be available to States for at least another year, the State's plan to migrate data from WaterTrack to SDWIS-State will allow the switch to SDWIS-Prime in the future to be simplified. The NCWS program estimates that it will be approximately a year before it can meet most of the RTCR reporting requirements. Meeting all RTCR reporting requirements might not be possible until SDWIS Prime is available. EPA Region 5 strongly recommends continued effort to address the State's reporting limitations and offers assistance to the State.

Data Reporting to SDWIS/Fed

The reporting schedule for States to upload data to the national database, SDWIS/Fed, is quarterly. The State met its quarterly reporting requirement in FY 2015; however, MDEQ did not meet the quarterly reporting deadlines for the third and fourth quarters of FY 2016. If the State's data is not reported to EPA Region 5 within 60 days, EPA Region 5 raises the issue to the State Director's attention. NCWS data reporting after the deadline is becoming more common, which makes it difficult for EPA Region 5 to process and correct data errors in a timely manner.

It is also important for the State to correct identified errors in the database in a timely manner. EPA Region 5 requests that the State prioritize correcting inventory errors, open-ended violations linked to SOX (return to compliance) codes in the Operational Data System (ODS), and report the required missing locational data. Note: The CWSs have 10 sources without locational data out of 3,358 sources, and NCWSs have 9 sources without locational data out of 1,692 sources; which is 99.4% accuracy.

[2] Reporting facility flow data has been an inventory requirement since June 1998.

NOTE: Since late 2016, MDEQ has been working to address IT issues. The process has begun to identify data needs, design and create data system(s) throughout the State's drinking water program, in addition to identifying costs and sources of funding.

**Compliance and Enforcement Management:**
EPA Region 5 tracks State commitments under EPA's Office of Enforcement and Compliance Assurance (OECA) measure SDWA02 and updates MDEQ quarterly. MDEQ committed to address or resolve 31 systems in FY 2015, and MDEQ addressed (returned to compliance) 34 priority systems. In FY 2016, Michigan committed to address or resolve 27 systems, and Michigan addressed (returned to compliance) 57 priority systems.

To summarize MDEQ enforcement in FY 2015:

- Two CWSs were referred to the State Attorney General (AG); neither system has returned to compliance;
- Civil fines were issued to four CWSs; all systems have returned to compliance;
- Civil fines were issued to 27 NCWSs; 22 out of 27 systems returned to compliance, and 3 out of 5 remaining systems resolved some violations;
- MDEQ did not issue any Administrative Orders on federally-reportable violations, or refer any cases to EPA Region 5 for federal enforcement.

To summarize MDEQ enforcement in FY 2016:

- One CWS was issued a State Administrative Order on federally-reportable violations and the system has returned to compliance;
- Civil fines were issued to eight CWSs; six of these have returned to compliance;
- Civil fines were issued to 29 NCWSs for TCR and/or Nitrate monitoring violations and one NCWS for an Arsenic monitoring violation; all systems have returned to compliance; and,
- MDEQ did not refer any cases to EPA Region 5 for enforcement.

During FY 2015, MDEQ agreed to verify system classification designations of 30 Michigan Head Start systems. Inventory improvement with regard to service area classification is ongoing. In FY 2016, MDEQ proposed implementing lead and copper sampling at transient noncommunity water system (TNCWS) Head Start systems. EPA Region 5 continues to follow-up with the State regarding the accuracy of service area classification, especially as related to systems that serve children.

EPA Region 5 continues to see progress in the State's efforts to reduce the number of NTNCWSs' long-term use of bottled water for arsenic non-compliance. Approximately 25% of these systems are still using bottled water for arsenic noncompliance. Due to a change in reporting of violations to SDWIS/Fed, the NCWS program notified these systems that they must begin quarterly monitoring for arsenic. Systems using bottled water for arsenic non-compliance are required to provide public notice until an alternate source is found or treatment is installed and the systems return to compliance. Schools and daycares have been prioritized to return to compliance. Each quarter, EPA Region 5 assesses MDEQ's progress in getting systems off of bottled water; progress has been slow. No timeframe has been established to return these systems to compliance; however, MDEQ continues to work with these systems to replace bottled water

with a permanent solution to arsenic exceedances. New NTNCWSs in violation of the arsenic standard should be addressed through State formal enforcement, which includes a plan and schedule to return the system to compliance. This plan can include a short-term provision of bottled water, until the system returns to compliance with the arsenic standard.

**Rules and Primacy:**

Revised Total Coliform Rule (RTCR):

MDEQ has been granted primacy for all federal drinking water regulations, and is implementing all drinking water rules. The State submitted its draft RTCR primacy package for EPA Region 5 review, and EPA Region 5 provided comments in February 2015 during the State's public comment period. The Michigan RTCR was promulgated on October 19, 2015. The State began implementation of RTCR April 1, 2016. EPA Region 5 received the State's final RTCR primacy package on April 20, 2016, and has begun review of this primacy package.

MDEQ has conducted numerous workshops/trainings and held stakeholder meetings over the past two years to determine the best way to implement the RTCR in Michigan.

RTCR implementation (since April 2016) has resulted in a large decrease in Maximum Contaminant Level (MCL) violations as the presence of total coliform, which was a violation under the old Total Coliform Rule, now triggers follow-up action (including increased monitoring by the system), not an MCL violation. SDWIS data also shows low numbers of total coliform monitoring violations, but this is because the State has been unable to report RTCR violations to SDWIS since April 2016 due to data system limitations. The State reported to EPA Region 5 in a program evaluation discussion that there has been an increase in total coliform monitoring violations since April 2016 with implementation of the RTCR due to required increased monitoring. In 2015, the State's data analysis found that 8% of violations were total coliform monitoring violations over a 12-month period; whereas in 2016, the occurrence of total coliform monitoring violations increased to 18% over an 8-month period. EPA continues to monitor RTCR implementation at all Region 5 States.

LCR:

MDEQ and EPA Region 5 have had recent discussions regarding the need for LHDs to review the LCR sample siting plans for NCWSs more frequently than on the 5-year sanitary survey cycle. EPA Region 5 encourages MDEQ to initiate this activity with the LHDs as soon as possible.

In 2016, MDEQ drafted a proposed Michigan Lead and Copper rule. MDEQ expects to have complete rules package by the end of 2017. The proposed rule includes:

- Reducing the lead action level from 0.015 mg/L to 0.010 mg/L;
- Establishing a lead "Household Advisory Level" of 0.040 mg/L;
- Enhancing public notification/public education procedures; for example, a system with a $90^{th}$ percentile that exceeds the lead action level must notify the public within 3 days of the State's determination;

- Not allowing reduced LCR compliance monitoring; and,
- Requiring water systems to submit an updated distribution system materials evaluation to the State.

**Sanitary Surveys:** MDEQ ensures that sanitary surveys are conducted on a frequency consistent with requirements specified by rule (every 3 years for CWSs and every 5 years for NCWSs). The LHDs are under contract by the State to perform sanitary surveys at all NCWSs. Each LHD's sanitary survey efforts are reviewed by the State periodically, but not less than annually. EPA Region 5 tracks State commitments to conduct sanitary surveys within the federally required intervals.

MDEQ accomplished the following (as reported by SDWIS-Fed):

- Michigan completed 93.3% of ground water and surface water sanitary surveys at CWSs completed between CY 2013 and CY 2015, which exceeds the National Program Measure, SDW-01a, of 79%.
- Michigan completed 91.4% of ground water and surface water sanitary surveys at CWSs completed between CY 2014 and CY 2016, which exceeds the National Program Measure, SDW-01a, of 79%.

Specifically,

- Surface Water (SW) systems:
  --For the time period CY 2013 – CY 2015, 92.9% (276 out of 297) of CWS surface water sanitary surveys were completed; and 100% (11/11) of TNCWS sanitary surveys were completed for the time period CY 2011 – CY 2015.
  --For the time period CY 2014 – CY 2016, 89% (267 out of 300) of CWS surface water sanitary surveys were completed; and 100% (11/11) of TNCWS sanitary surveys were completed for the time period CY 2012 – CY 2016.

- Ground Water (GW) systems:
  --For the time period CY 2013 - CY 2015, 93.4% (999/1,070) of CWS ground water sanitary surveys were completed; for the time period CY 2011 - CY 2015, 98.1% (1,206/1,229) of NTNCWS ground water sanitary surveys were completed; and, for the time period CY 2011 – CY 2015, 98.3% (7,531/7,661) of TNCWS sanitary surveys were completed.
  -- For the time period CY 2014 - CY 2016, 92.1% (982/1,066) of CWS ground water sanitary surveys were completed; for the time period CY 2012 - CY 2016, 98.8% (1,212/1,227) of NTNCWS ground water sanitary surveys were completed; and, for the time period CY 2012 – CY 2016, 98.6% (7,477/7,587) of TNCWS sanitary surveys were completed.

**Laboratory Certification:** The State is expected to maintain: (1) certification for the principal State laboratory, (2) a certification program to certify commercial laboratories within the State, and (3) a process for ensuring capacity to analyze at the principal State laboratory or commercial laboratories all parameters that are required to be sampled in the State. Laboratory certification

responsibilities in Michigan are undertaken by the MDEQ Laboratory, and radiological parameters are analyzed by commercial certified laboratories approved by the State. MDEQ agrees to ensure all laboratories that produce results for compliance with the SDWA are recertified at least once every three years and will meet all requirements of 40 CFR parts 141 and 142.

The State's Quality Management Program is currently up-to-date. In addition, the MDEQ's Laboratory Certification Program's Quality System is reviewed monthly with the Chief of the Laboratory Services Section determining whether program goals are being achieved including: scheduling, any problems with the certification process, or private laboratories having difficulty meeting the State's program requirements. The Chief of the Laboratory Services Section also audits the private laboratory inspection process by accompanying the State laboratory inspector on several audits every year.

The most recent on-site review of the Michigan Laboratory and Laboratory Certification Program Review was conducted in 2016; the final report was issued September 29, 2017, and the MDEQ Laboratory was granted full certification for chemical and microbiological analyses.

For a number of years, MDEQ had been developing the Electronic Drinking Water Reports (eDWR), a data system that would report data from private laboratories to the State. However, new releases of SDWIS-State changed how eDWR worked, and the State lacked resources to keep up with the continuing updates to SDWIS-State versions.

EPA Region 5 has strongly encouraged MDEQ to focus IT resources on a Lab-to-State data management application. Since a large portion of the NCWS sample data from private laboratories are still being hand-entered by LHD staff and some CWS staff, the State wants to take full advantage of EPA's Compliance Monitoring Data Portal (CMDP), which was released in fall of 2016. The State could fold CMDP implementation into its SDWIS-Prime transition activities. Implementation of a Lab-to-State application, such as CMDP, would ensure that MDEQ and the LHDs will be notified more quickly of hold time exceedances, so there will be more opportunity to notify the water supply in order to obtain a replacement sample before the monitoring period ends. Also, a Lab-to-State application will improve the timeliness issue of State's receipt of private laboratories' results, of reporting positive results to the State promptly, and improve data quality.

**Operator Certification:** MDEQ established and implemented minimum professional standards for the operation and maintenance of public water systems to ensure that trained and certified professionals are overseeing the treatment and distribution of safe drinking water and to promote compliance. MDEQ provides documentation to EPA Region 5 annually, to show the ongoing implementation of the operator certification program to avoid 20% withholding of the DWSRF grant. The FY 2015 and the FY 2016 Operator Certification reports were received by their respective deadlines and approved. Highlights from EPA Region 5's approval letters include:

- Compliance rates of systems with an Operator-in-Responsible Charge are as follows: In FY 2015, CWSs had a 99.9% compliance rate, NTNCWSs have a 97.6% compliance rate, and TNCWSs have a 95.2% compliance rate (where required by state rules). In FY

2016, CWSs had a 99.8% compliance rate, NTNCWSs have a 97.3% compliance rate, and TNCWSs required by state rules have a 96.9% compliance rate

- MDEQ should continue to ensure adequate resources are available to implement the program through fees, State funds, and DWSRF set-aside funds.
- EPA Region 5 recommends that MDEQ periodically review trends of recent renewal rates, combined with the trends of recent new operator certifications, to see if future staffing and compliance needs at Michigan water systems will be sufficient to ensure an adequate number of certified operators in Michigan.
- EPA Region 5 recommends MDEQ consider how continuing education opportunities, technical assistance, and/or operator certification examinations can be used to strengthen operators' knowledge and implementation of corrosion control technology, and improve knowledge on how to identify lead service lines and lead components in the distribution system.

During the upcoming year, EPA Region 5 plans to continue to evaluate EPA Region 5 State's Operator Certification Programs to ensure the nine Baseline Standards are met, as outlined in EPA's Operator Certification Guidelines.

**Capacity Development:** MDEQ ensures that new and existing CWSs and NTNCWSs can demonstrate technical, managerial, and financial capacity to operate in compliance with federal and State regulations. MDEQ annually provides documentation to EPA Region 5 by December 30th to show the ongoing implementation of the Capacity Development Program for New Systems and the Capacity Development Strategy for Existing Systems, in order to avoid 20% withholding of the DWSRF grant. The FY 2015 and FY 2016 Capacity Development reports were received by their respective deadlines and approved. Highlights from EPA Region 5's approval letters include:

- EPA Region 5 recommends providing extra technical, financial and managerial assistance to existing systems which have changed their source water or have a new source.
- EPA Region 5 recommends including systems which change classification from a TNCWS to a NTNCWS, on the list of new systems for which capacity is tracked more closely.
- EPA Region 5 supports MDEQ's new regulations that require an asset management program for CWSs with a population greater than 1,000, beginning January 1, 2018.

No new systems within the last four years (FY 2013—FY 2016) were considered a high priority for enforcement [i.e., had a score of 11 or more on the Enforcement Tracking Tool (ETT)].

MDEQ has implemented several regulatory initiatives to promote asset management at water supplies. Drinking water administrative rules were amended to strengthen capacity development and asset management principles, by requiring all municipal public water systems designed to provide fire protection to complete a more comprehensive Asset Inventory, and prepare 5-year and 20-year Capital Improvement Plans (CIP) by January 2016. Additionally, previously exempt facilities (those licensed annually by the State, including manufactured housing communities and health care facilities), are required to prepare a general plan by January 2016. A second set of

amendments to the drinking water administrative rules were promulgated by the State in October 2015 which will require CWSs with a population greater than 1,000, including municipal and private systems, to implement an Asset Management Plan by January 2018. The Asset Management Plan required in the amendments, includes an Asset Inventory, 5-year and 20-year CIPs, and a summary of the funding structure and rate methodology that provides sufficient resources to implement the Asset Management Plan. The Revolving Loan Section within the Drinking Water and Municipal Assistance Division within MDEQ works with water systems to develop Financial Action Plans, and promotes the development of Asset Management Plans and CIPs.

**Ground Water and Source Water Protection:**

MDEQ annually reports to EPA the number of CWSs with Source Water Protection (SWP) plans and the population served by CWSs with minimized risk due to SWP. Even though source water protection is voluntary in Michigan, MDEQ exceeded its 30% target (34.9%) in FY 2015 to ensure CWSs have SWP plans. MDEQ met its target of 80% (80.7%) of the population served by CWSs with minimized risk due to SWP. In FY 2016, MDEQ exceeded its 32% target (35.8%) to ensure CWSs have SWP plans. MDEQ met its target of 80% (79.7%) of the population served by CWSs with minimized risk due to SWP. MDEQ recommends that SWP plans be updated every 6 years, especially in prioritized areas, to be considered as substantially implementing SWP. MDEQ expects these target levels to potentially drop the next fiscal year if CWSs do not update their SWP program plans.

MDEQ has continued to contract with Michigan State University (MSU) to continually improve the Michigan Ground Water Management Tool (MGMT), an innovative tool that uses information from the Wellogic water well record system to perform particle tracking and delineate Wellhead Protection Areas (WHPAs). MDEQ has used MGMT to delineate 2,745 WHPAs for CWSs that had previously not completed WHPA delineations. This effort has resulted in WHPAs for:

- 3,458 wells serving a total of 1,264 CWSs, where 1,280 total WHPAs consist of 379 WHPAs that have been identified by traditional means, and 901 WHPAs that have been identified using MGMT; and,
- 1,960 NTNCWSs wells corresponding to approximately 1,465 WHPA delineations.

MSU has successfully created a spatially accurate groundwater database from Wellogic data, to refine the delineation process using MGMT, and to better determine the drift thickness of the aquifer. MDEQ is also focusing on outreach to CWSs and NTNCWSs to train them on MGMT and its capabilities related to delineations of WHPAs. Two workshops were conducted in the Lower Peninsula, Midland and Novi, and the final workshop was held in the Upper Peninsula in December 2015.

MDEQ has a WHP Program which offers a 50/50 grant to CWSs to develop a WHP plan and conduct WHP activities. This program has been very successful, though funding for this program has decreased over the past 13 years. In FY 2015, $523,000 was awarded to 46 CWSs to conduct wellhead protection activities, which is the largest number of 50/50 WHP grants issued to CWSs

since 2006. In FY 2016, $461,100 was awarded to 45 CWSs to conduct wellhead protection activities.

Using the WHP 50/50 Grant Program as a template, MDEQ developed a Surface Water Intake Protection (SWIP) Program that incentivizes participation in the development of a SWIP plan with 50/50 grants (through the DWSRF's Local Assistance Capacity Development set-aside). Implementation of the SWIP grant program began in FY 2014. In FY 2015, $50,000 was awarded to the City of Detroit to develop SWIP plans for their intakes at Lake Huron, Belle Isle and Fighting Island. All work was completed. In FY 2016, MDEQ awarded a SWIP grant to Muskegon for $15,000, and continued to offer grants to CWSs for surface water protection. An additional $50,000 was offered to LHDs to revise the many outdated source water assessments at NTNCWSs. In FY 2016, 17 LHDs participated in the completion of 124 NTNCWS source water assessments, utilizing about $10,750.

In the next few years, MDEQ will focus more on Harmful Algal Blooms (HAB) and assessing HABs effects on surface water systems, by evaluating surface water system vulnerability to HABs.

Challenges to implementing SWP in Michigan include the loss of State source water staff due to budget cuts and retirements.

**Measures and Indicators:** The enclosed Measures and Indicators page is a compilation of the most recent data (April 2017) for most quantitative measures that EPA Region 5 uses to regularly assess State program performance, including the National Program Measures, Regional Shared Goals, and Regional High Priority queries.

National Program Measures
MDEQ met all of the National Program Measures from EPA's Office of Ground Water and Drinking Water (OGWDW) and the Office of Enforcement and Compliance Assurance (OECA).

Regional Shared Goals
Below is a summary of the Regional Shared Goals data.

- Since 2006, EPA Region 5 and MDEQ have agreed upon 7 shared compliance goals to track compliance trends, to identify compliance areas needing improvement, and to obtain State commitments to improve compliance.
    - The CY 2015 Regional Shared Goals data (final data as of July 2016), show that MDEQ met 3 of the 7 goals.
    - The CY 2016 Regional Shared Goals data (final data as of June 2017), show that MDEQ met 4 of the 7 goals.
    - CWS monitoring violations have been increasing during CY 2015 and CY 2016.

- The number of TNCWSs and NTNCWSs with monitoring violations for total coliform and nitrate decreased in CY 2016 compared with CY 2015. However, this could be due to the State being unable to report RTCR violations to SDWIS since April 2016 due to data limitations.

- The number of NTNCWSs with monitoring violations of chronic health risks, such as volatile organic contaminants, has increased dramatically since FY 2014.

Regional High Priority Query Data

Regional High Priority query data for FY 2015 and FY 2016 has been reviewed and is included in the Measures and Indicators pages; however, RTCR data is currently being re-evaluated due to the change from TCR to RTCR in April 2016. Late RTCR violation data will be evaluated in April 2018. The Late Nitrate Rule Reporting query will be available in April 2018. The query is currently being re-written due to changes in the database.

The State continues to conduct sanitary surveys at most of its public water systems in a timely manner, and meeting the deadlines set in regulation. The State continues to report CWS new rule violations for GWR, Stage 1 and Stage 2 DBPR, Lead Consumer Notice violations, and the lack of a certified operator violations.

## Other Observations

Michigan's Cross Connection Control Program

Cross-connection control prevents backflow or backsiphonage from flowing into the public water supply and contaminating the public water supply. While cross-connection control is not a federal requirement, EPA recognizes the importance of certain State-only prevention programs, such as cross connection control. The susceptibility of water systems to cross-connections prompted the National Academy of Sciences (NAS) to list backflow prevention as the highest priority for reducing risk to public health because there is a long history of recognized significant health risks posed by cross-connections; epidemiological and surveillance data implicate cross-connections in outbreaks or sporadic cases of waterborne disease.

In the past several years, the Michigan State Legislature proposed legislation prohibiting or limiting testing of backflow preventers installed in specific plumbing installations, like residential irrigation systems. By reducing the State's oversight of residential cross connections, EPA Region 5 is concerned that the effectiveness of the State's cross connection control program will be decreased, and public health protection will be jeopardized.

November 2017

## FY 2015/FY 2016 Michigan PWSS Indicators and Measures
## October 1, 2014 through September 30, 2016

| # | Description | Type | Used For | Name and Update Schedule | File | Target | Applicable period (CY/FY) | Results and Comments |
|---|---|---|---|---|---|---|---|---|
| Office of Water National Program Measures | | | | | | | | |
| 1 | % of pop. served by CWS that receive DW that meet health based standards | NPM/GPRA | PWSS overall | SDW-2.1.1 (Updated quarterly by HQ—NPM Measures Tables filtered for active, non-RTC'd MCL violations) | National Program Manager (NPM) measures | FY14: 94%<br>FY15: 92%<br>FY16: 92% | FY[1] (e.g., for FY14, the measure is calculated as of October 2014 for the period 7/1/13 to 6/30/14) | **FY14:** EOY: 99.2% (met)<br>**FY15:** EOY: 97.7% (met)<br>**FY16**: EOY: 98.9% (met) |
| 2 | % of CWS that meet health based standards | NPM/GPRA | PWSS overall | SDW-SP1.N11 (Updated quarterly by HQ—NPM Measures Tables) | NPM measures | FY14: 93%<br>FY15: 90%<br>FY16: 90% | same as item #1 above | **FY14:** EOY: 95.9% (met)<br>**FY15:** EOY: 94.7% (met)<br>**FY 16:** EOY: 96% (met) |
| 3 | % of "person months" in which CWS are meeting health-based standards | NPM/GPRA | PWSS overall | SDW-SP2 (Updated quarterly by HQ—NPM Measures Tables) | NPM measures | FY14: 96%<br>FY15: 95%<br>FY16: 95% | same as item #1 above | **FY14:** EOY: 99.8% (met)<br>**FY15:** EOY: 99.2% (met)<br>**FY16:** EOY: 99.6% (met) |
| 4 | % of CWS with minimized risk b/c of SWP | NPM/GPRA | PWSS GW SWP | SDW-SP4a (Updated annually in October by States) | NPM measures | FY14: 31%<br>FY 15: 30%<br>FY 16: 32% | same as item #1 above | **FY14:** 32.2% (met)*<br>**FY15:** 34.9% (met)*<br>**FY16:** 35.8% (met)*<br>*SWP voluntary in MI |
| 5 | % of population served by CWSs with minimized risk b/c of SWP | NPM/GPRA | PWSS GW SWP | SDW-SP4b (Updated annually in October by | NPM measures | FY14: 79%<br>FY15: 80%<br>FY 16: 80% | same as item #1 above | **FY14:** 80.2% (met)*<br>**FY15:** 80.7% (met)*<br>**FY16**: 80% (met)*<br>*SWP voluntary in MI |

[1] However, due to the lag between when data are submitted and when the FY ends, the actual date range of the data used for these measures is one quarter off from the FY.

| # | Description | Type | Used For | Name and Update Schedule | File | Target | Applicable period (CY/FY) | Results and Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | States) | | | | |
| 6 | % of CWS with san. survey w/in the past 3 yrs<br><br>**+NOTE**: This national measure was modified in FY14 to include both surface water and ground water systems. In prior years, this measure only reported "% of CWS with san survey within the past 3 years for Subpart H systems". | NPM/GPRA | PWSS SS | SDW-01a (Updated annually in July by HQ – Status queries updated by Region 5 in April and October) | NPM measures<br><br>+NOTE: This national measure was modified in FY14 to include both surface water and ground water systems. | FY14: 75%<br>FY15: 79%<br>FY16: 79% | CY (e.g., July 2014 data includes sanitary surveys at CWSs completed between 1/1/11 and 12/31/13; R5 also looks at NCWSs completed between 1/1/09 and 12/31/13, but this is not part of the national measure) | **FY14**: 92.2% (1261/1367) of sanitary surveys at CWSs (GW and SW) completed between CY 2012 and CY 2014.<br>**FY15**: 93.3% of sanitary surveys at CWSs (GW and SW) completed between CY 2013 and CY 2015.<br>**FY16**: 91.4% of sanitary surveys at CWSs (GW and SW) completed between CY 2014 and CY 2016.<br>Specifically:<br>CWS-SW 276/300=89.0%<br>CWS-GW 982/1066=92.1%<br>NCWS (GW and SW) sanitary surveys completed between CY 2012 and CY 2016:<br>TNC-SW 11/11= 100%<br>NTNC-GW 1212/1227=98.8%<br>TNC-GW 7477/7587=98.6% |
| 7 | Fund Utilization Rate for DW SRF | NPM/GPRA | DWSRF | SDW-04 (Updated annually as of June 30 by HQ and tracked through DWNIMS database) | NPM measures | FY 14: 80%<br>FY 15-16: no state specific targets | The FY14 EOY data are cumulative as of 6/30/14. | **FY14:** N/A **(State-specific numbers removed. Not including State-specific targets.**<br>**FY15:** N/A **(this measure not included in HQ reported measures)**<br>**FY16:** N/A **(this measure not included in HQ reported measures)**<br>**NOTE: EPA Region 5's State and Tribal Programs Branch (STPB) uses tools and resources other than national measures, SDW-04, SDW-05, and SDW-11, to** |

| # | Description | Type | Used For | Name and Update Schedule | File | Target | Applicable period (CY/FY) | Results and Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | provide an accurate evaluation of the state's progress in implementing the DWSRF program. Region 5 believes that the most recent DWSRF Performance Evaluation Report (PER), prepared by STPB with input from GWDWB, should be consulted for a more accurate status of the state's DWSRF program. |
| 8 | # of DWSRF projects that have initiated operations (cumulative)*<br>*NOTE: as of FY 2014, OGWDW is no longer tracking base only (w/o ARRA) | NPM/GPRA | DWSRF | SDW-05 (Updated annually as of June 30 by HQ and tracked through DWNIMS database) | NPM measures | FY11: 160 ARRA- and base-funded projects, and 140 base-funded only projects<br>FY12: 170 ARRA- and base-funded projects, and 150 base-funded only projects<br>FY13: 180 w/ARRA; 160 Base<br>FY 14: 240* | The EOY data are cumuli-tive as of June 30 of the same year as EOY. | FY14: N/A (State-specific numbers removed. Not including State-specific targets.<br>FY15: N/A (this measure no longer has state-specific targets, only a regional target.<br>FY16: N/A (this measure no longer has state-specific targets, only a regional target. |
| 9 | % of DWSRF projects awarded to PWS serving | NPM/GPRA | DWSRF | SDW-11 (Updated | NPM measures | This is an indicator. | | FY14: HQ is not reporting to the Region state-specific or Regional |

| # | Description | Type | Used For | Name and Update Schedule | File | Target | Applicable period (CY/FY) | Results and Comments |
|---|---|---|---|---|---|---|---|---|
| | <500, 501-3,300, & 3,301-10,000 | | | annually as of June 30 by HQ) | | There are no state targets. | | EOY numbers.<br>**FY15:** HQ is not reporting to the Region state-specific or Regional EOY numbers.<br>**FY16:** HQ is not reporting to the Region state-specific or Regional EOY numbers. This is now an indicator reported on a regional basis. |
| 10 | # & % of small CWS and NTNCWS (<500, 501-3,300, & 3,301-10,000) w/repeat health-based $NO_3$ & $NO_2$, Stage 1 D/DBP, SWTR, & TCR violations | NPM/GPRA | PWSS | SDW-15 (Updated annually in October by HQ) | NPM measures | This is an indicator. There are no state targets. | Same as item #1 above | **FY14:** In FY14, there were 13 small CWSs and NTNCWs (LT 10K pop) with repeat health-based $NO_3$ and $NO_2$, Stage 1 D/DBP, SWTR, and TCR violations.<br>**FY15:** In FY15, there were 13/2,625 (0.5%) small CWS and NTNCWSs (LT 10K pop) with repeat health-based Nitrate/Nitrite, Stage 1 D/DBP, SWTR and TCR violations.<br>**FY16:** In FY16, there were 9/2,627 (0.3%) small CWS and NTNCWSs (LT 10K pop) with repeat health-based Nitrate/Nitrite, Stage 1 D/DBP, SWTR and TCR violations. |
| 11 | # & % of schools and childcare centers that meet all health-based DW standards | NPM/GPRA | PWSS | SDW-17 (Updated annually in October by HQ, but can be generated from quarterly NPM measure) | NPM measures | This is an indicator. | Same as item #1 above | **FY14:** In FY 14, 598 out of 625 (95.5%) schools/ childcare centers met all health-based drinking water standards.<br>**FY15:** In FY 15, 597 out of 624 (95.7%) schools/ childcare centers met all health-based drinking water standards.<br>**FY16:** In FY 16, 611 out of 626 |

| # | Description | Type | Used For | Name and Update Schedule | File | Target | Applicable period (CY/FY) | Results and Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | (97.6%) schools/childcare centers met all health-based drinking water standards. |
| 12 | # of dw and ww utilities and local, state, and fed officials receiving training and tech assistance to enhance emergency prep and resiliency to reduce risk from all hazards, including those attributed to climate change | NPM/GPRA | PWSS | SDW-21 (Updated annually in October by HQ) | TBD | This is an indicator; there are no state targets. | TBD | **FY15/FY16: This measure is reported by HQ.** |
| Office of Enforcement and Compliance Assistance National Program Measure | | | | | | | | |
| 13 | During FY2015/FY2016, the primacy agency must address with a formal enforcement action or RTC the # of priority systems equal to the # of its PWSs that have a score of 11 or higher on the July 2015 ETT report. | NPM/ OECA | PWSS ECA | SDWA02 (Updated quarterly by HQ at https://echo.epa.gov/targeting/safe-drinking-water-act-enforcement-targeting-tool-reports) | ETT website: (OECA's ECHO drinking water data website) | FY14: 13<br>FY15: 31<br>FY16: 27 | The ETT is generated on a quarterly basis with the measure based on FY[2] | **FY14:** Michigan committed to address with formal enforcement or RTC 13 systems in FY 2014. During FY 2014, Michigan RTC'd 31 PWSs.<br>**FY15:** In FY15, Michigan committed to address 31 priority systems with formal enforcement or RTC, and Michigan exceeded this commitment by addressing 34 systems.<br>**FY16:** In FY16, Michigan committed to address 27 priority systems with formal enforcement or RTC, and Michigan exceeded this commitment by addressing 57 systems. |
| Regional Shared Goals | | | | | | | | |

[2] Each quarterly ETT calculation includes the most current data in the associated SDWIS/FED data freeze. For example, the October 2014 ETT includes data through 6/30/2014. The ETT retrieves addressed violations going back 5 years from the most current data (i.e., for October 2014, the ETT retrieves addressed violations from 7/1/2009 to 6/30/2014). Note that addressed violations do not contribute to ETT scores. In addition, the ETT score includes all un-addressed violations, even if they are more than 5 years old.

| # | Description | Type | Used For | Name and Update Schedule | File | Target | Applicable period (CY/FY) | Results and Comments |
|---|---|---|---|---|---|---|---|---|
| 14 | **1. % of NTNCWSs receive water that meets health-based drinking water standards**<br>**2.% of TNCWSs meeting all health based standards**<br>**3. % of population served by CWSs with significant/major monitoring violations**<br>**4. % of CWSs with significant/major monitoring violations**<br>**5. % of NTNCWSs with significant/major monitoring violations for acute health risks**<br>**6. % of NTNCWSs with significant/major monitoring violations for chronic health risks**<br>**7. % of TNCWSs with significant/major monitoring violations.**<br><br>**NOTE: In FY 2017, the queries for Shared Goals #2-7 for CY 2014, CY 2015, CY 2016 were re-written and calculated, so that comparisons of data between years from CY 2014 forward could be conducted more accurately.** | Shared Goals | | (Updated annually in April by Region 5) | Regional Shared Goals | By CY 2016:<br>1 = ≥95%<br>2 = ≥95%<br>3 = <5%<br>4= <10%<br>5 = <5%<br>6 = <10%<br>7 = <10% | **CY** | **CY 2014**:<br>NOTE: Asterisk (*) indicates target **not met**.<br>1. 95.5% (met)<br>2. 97.7% (met)<br>3. 4.6% (met)<br>4. 6.6% (met)<br>5. **5.2%***<br>6. 5.4% (met)<br>7. 8.0% (met)<br>**CY2014 EOY: 6 out of 7 Shared Goals met.** Much improvement noted from CY 2013. Only 1 goal not met, but very close; for NTNCWSs with significant/major monitoring violations for acute contaminants (nitrate/TCR).<br><br>**CY 2015**:<br>NOTE: Asterisk (*) indicates target **not met**.<br>1. 97.0% (met)<br>2. 97.1% (met)<br>3. **7.4%* inc of 2.8%**<br>4. **13.7%* inc of 7.1%**<br>5. **5.5%* slight inc**<br>6. **14.1%* inc of 8.7%**<br>7. 9.5% (met) inc of 1.5%<br>**CY2015 EOY: 3 out of 7 Shared Goals met.** The inc in Goal 3 indicates some CWSs could be having issues with significant/major monitoring violations, but the dramatic increase in Goal 4 indicates that many smaller CWSs are having |

| # | Description | Type | Used For | Name and Update Schedule | File | Target | Applicable period (CY/FY) | Results and Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | problems sampling and are accruing monitoring violations. Goal number 5 not met in FY 2014 or FY 2015 for NTNCWSs with significant/major monitoring violations for acute contaminants (nitrate/TCR). Inc in Goal 6 by 8.7% may be due to NTNCWSs triennial VOC/SOC monitoring due. The inc in Goal 7 indicates TNCWSs are receiving more M/R violations for not sampling for coliform and nitrates.<br><br>**CY 2016**:<br>NOTE: Asterisk (*) indicates target **not met**.<br>1. 98.6% (met)<br>2. 99.7% (met)<br>3. **8.3%* inc of 0.9%**<br>4. **14.2%*inc of 0.5%**<br>5. 3.23% (met) dec of 2.3%<br>6. **14.7%* inc of 0.6%**<br>7. 7.7% (met) dec of 1.8%<br>**CY2016 EOY: 4 out of 7 Shared Goals met.** The inc in Goal 3 by 1.5% indicates some CWSs could be continuing to have issues with significant/major monitoring violations, but the increase in Goal 4 by 2.7% indicates that many smaller CWSs are having problems sampling and are accruing monitoring violations. Continued inc in Goal 6 indicates NTNCWSs are not sampling for |

| # | Description | Type | Used For | Name and Update Schedule | File | Target | Applicable period (CY/FY) | Results and Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | chronic contaminants as required. The inc in Goal 7 by 1.8% indicates TNCWSs are receiving more M/R violations for not sampling for coliform and nitrates. |
| 15 | New Rule Violation Completeness Reporting (GWR, LCRSTR, Stage 2, LT2). | R5 High Priority | PWSS DM | (Updated quarterly by Region 5) | Region 5 high priority query –new rule completeness reporting | None | **N/A—this query pulls all violations for the new rules ever reported for any system type.** | NOTE: The query used here includes all violations ever reported to SDWIS/Fed for these rules.<br>**FY14:** July 2015*: LT2: no violations reported.<br>GWR: 50 GWR M/R violations, 7 TT violations.<br>Stage 1: 6 TT violations.<br>Stage 2: 13 MCL violations.<br>Stage 2: 169 M/R violations.<br>LCRSTR: 11 consumer notification M/R violations.<br>**FY15:** July 2016*: LT2: no violations reported.<br>GWR: 59 GWR M/R violations, 12 GWR TT violations.<br>Stage 1: 7 TT violations<br>Stage 2: 31 MCL violations.<br>Stage 2: 251 M/R violations.<br>LCRSTR: 50 consumer notification M/R violations.<br>**FY16:** July 2017*: LT2: 31 TT violations reported, 2 M/R violations reported.<br>GWR: 82 GWR M/R violations, 13 GWR TT violations.<br>Stage 1: 7 TT violations<br>Stage 2: 34 MCL violations.<br>Stage 2: 393 M/R violations. |

| # | Description | Type | Used For | Name and Update Schedule | File | Target | Applicable period (CY/FY) | Results and Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | LCRSTR: 79 consumer notification M/R violations. |
| 16 | SW and GW Sanitary Survey Completeness (not a national measure yet) | R5 High Priority | PWSS Sanitary Surveys GWR | (Updated in April and October by Region 5) | R5 high priority query—surface and ground water | None. | CY (e.g., July 2014 data will include sanitary surveys completed between 1/1/11 and 12/31/13 and NCWS sanitary surveys completed between 1/1/10 to 12/31/14)[3] | **FY14:** As of April 2015, 92.54% (273 out of 295) of CWS SW sanitary surveys were completed, and 92.16% (988/1072) of CWS GW sanitary surveys were completed between CY 2012 and CY 2014.<br>During CY 2012 – CY 2014: 100% (11/11) of TNCWS SW sanitary surveys were completed. 98.72% (1232/1248) of NTNCWS GW sanitary surveys were completed for time period CY 2010-CY 2014, and 98.4% (7613/7737) of TNCWS GW sanitary surveys were completed during time period CY 2010-CY 2014.<br>**FY15:** As of April 2016, 97.8% (9736/9960) of all GW systems had a sanitary survey within the proper timeframe (CWS: CY 2013-CY 2015; and NTNCWS/TNCWS: CY 2011-CY 2015.)<br>92.9% (276 out of 297) of CWS SW sanitary surveys were completed, and 93.4% (999/1070) of CWS GW sanitary surveys were completed between |

[3] This will be measured in July 2013 for CWSs surveys completed between 1/1/10 to 12/31/12, in 2014 for NCWSs surveys completed between 1/1/10 to 12/31/14, and then every year after that (with rolling three-year periods).

| # | Description | Type | Used For | Name and Update Schedule | File | Target | Applicable period (CY/FY) | Results and Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CY 2013 and CY 2015.<br>During CY 2013 – CY 2015: 100% (11/11)) of TNCWS SW sanitary surveys were completed. 98.1% (1206/1229) of NTNCWS GW sanitary surveys were completed for time period CY 2011-CY 2015, and 98.3% (7531/7661) of TNCWS GW sanitary surveys were completed during time period CY 2011-CY 2015.<br>**FY16**: This data has been included in item 6 above. |
| 17 | Late RTCR Rule Reporting<br><br>(In April 2016, the State began implementing RTCR. The State cannot currently report NCWS RTCR violations due to data management limitations, thus this query cannot be run for NCWSs) | R5 High Priority | PWSS<br>DM<br>TCR | (AFfter April 2018, updated annually in October by Region 5) | TBD | None | **CY** | **FY15** data is currently being re-analyzed, due to the change from TCR to RTCR in April 2016. Late RTCR violations will be evaluated in April 2018.<br>**FY16:** The nitrate late reporting query will be available in April 2018. |
| 18 | Late Nitrate Rule Reporting | R5 High Priority | PWSS<br>DM<br>$NO_2/NO_3$ | (Updated annually in October by Region 5) | R5 high priority query—late nitrate rule reporting | None | **CY** | **FY15:** The data is currently being re-analyzed.<br>**FY16:** The nitrate late reporting query will be available in April 2018. This query is currently being re-written due to changes in the database. There was concern that the data were being analyzed too soon, such that |

| # | Description | Type | Used For | Name and Update Schedule | File | Target | Applicable period (CY/FY) | Results and Comments |
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| | | | | | | | | there wasn't a chance for States to be late. |
| 19 | Arsenic MCL Non-compliance (% CWS/NTNCWS systems in violation) | R5 High Priority | PWSS As | Updated annually in January by R5 | R5 high priority query—arsenic MCL noncompliance | None | **This query is based on data in the 4th quarter national program measure tables (e.g., the January 2014 query covers the period from 10/1/2012 to 9/30/2013).** | **FY14:** Data as of January 2015 indicates 99.78% CWSs were in compliance where 4 CWSs (total pop 265) had arsenic MCLs that were not RTC'd. The State has successfully reduced its number of NTNCWSs under bottled water agreements from 36 to 27; a 25% decrease. **FY15:** Data as of January 2016 indicates 99.86% CWSs were in compliance where 2 CWSs with 5 health-based violations (total pop 75) had arsenic MCLs that were not RTC'd. 99.39% NTNCWSs were in compliance where 8 NTNCWSs with 9 health-based violations (total pop 1,400) had arsenic MCLs that were not RTC'd. The State continues to reduce its number of NTNCWSs under bottled water agreements. **FY16:** Data as of January 2017 indicates 99.86% CWSs were in compliance where 2 CWSs with 7 health-based violations (total pop 238) had arsenic MCLs that were not RTC'd. |

| # | Description | Type | Used For | Name and Update Schedule | File | Target | Applicable period (CY/FY) | Results and Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 99.15% NTNCWSs were in compliance where 11 NTNCWSs with 14 health-based violations (total pop 1,919) had arsenic MCLs that were not RTC'd. The State continues to reduce its number of NTNCWSs under bottled water agreements. (Refer to FY 2015/FY 2016 EOY report under Compliance and Enforcement Management for further discussion of the bottled water agreements.) |